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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/757,359	01/13/2004	Toshiyuki Kojima	OMRNP075	3338

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EXAMINER	
HOUSHMAND, HOOMAN	

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2619	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/757,359	Applicant(s) KOJIMA ET AL.	
	Examiner Hooman Houshmand	Art Unit 2619	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on 17 September 2007.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) 1-8,20 and 21 is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) 1-8,20 and 21 is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on 31 August 2007 is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Response to Amendment

Applicant's amendments and accompanying remarks, filed on 09/17/2007, have been entered and have been fully considered. Claims 9-19 are canceled, claims 1-8 are amended, and claims 20 and 21 are added. Claims 1-8, 20 and 21 are now pending.

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1-8, 20-21 are rejected under 35 U.S.C. 102(b) as being anticipated by Bell (USP 6052380), which incorporates by reference Chow (USP 5,479,447).

Regarding **Claim 1**:

Bell (col 10, lines 9-12), (col 11-12, lines 57-3), (col 10, lines 19-21) teaches a method of judging communication stability of a network system (channel equalization method col 11, line 58) including a master unit (the Master node col 11, line 65) forming a programmable controller (programmable processor col 8, lines 36-39) and a slave (node col 12, line 37) connected to a network, the method comprising the steps of: transmitting from the master unit to the slave a distorted test pattern (the signal frequency altered)

formed by distorting a standard test pattern (a specific frequency) to a specified distortion level (discrete multi-tone col 11, line 67); returning a response from the slave to the master unit if the slave receives the distorted test pattern normally; and judging that the network system has communication stability corresponding to the specified distortion level (noise and attenuation col 4, line 33) if the master unit receives the response normally (channel equalization process col 11, line 66).

In addition, Chow teaches the discrete multi-tone technique (col 2 lines 43-46).

Furthermore, Chow teaches changing the width of each pulse (Col 5 line 32-33 changing the width of a pulse is equivalent to changing its bandwidth. This equivalency is from the Fourier transform. For example the Fourier transform of a rectangular pulse is the sinc function, as the rectangular pulse is narrowed in the time domain, its frequency bandwidth changes (increases) in the frequency domain) of a standard test pattern.

Regarding **Claim 2**:

Chow teaches a plurality of distorted test patterns (performance margin objective and desired overall bit-error-rate col 7 lines 25-27) are sequentially transmitted (incrementally add, one bit at a time, the amount of data to be transmitted col 5 lines 2-3) from the master (transmitter col 2 line 44) to the slave (receiver col 2 line 45), each of the distorted test patterns being formed by distorting the standard test pattern to a different one of a plurality of specified distortion levels (variable target bit error rates col 5 line 35), the method further comprising the steps of: determining a boundary (system

performance margin col 5 lines 46-47), beyond which communication from the master unit to the slave becomes impossible (monitoring the mean-squared-errors col 5 line 55), based on whether or not there is a response from the slave to the distorted test pattern (bi-directional communication between transmitter and receiver col 7 lines 8-9) distorted to each of the specified distortion levels (signal-to-noise ratio col 5 line 44); and determining the communication stability based on the boundary (system performance margin col 3 line 61).

Furthermore, Chow teaches changing the width of each pulse (Col 5 line 32-33 changing the width of a pulse is equivalent to changing its bandwidth. This equivalency is from the Fourier transform. For example the Fourier transform of a rectangular pulse is the sinc function, as the rectangular pulse is narrowed in the time domain, its frequency bandwidth changes (increases) in the frequency domain) of a standard test pattern.

Regarding **Claim 3**:

Chow teaches the slave (receiver col 2 line 45) returns the response by distorting the response (variable target bit error rates col 5 line 35) according to the specified distortion level (performance margin objective and desired overall bit-error-rate col 7 lines 25-27) of the distorted test pattern received from the master unit (Bell col 12 lines 4-8).

Furthermore, Chow teaches changing the width of each pulse (Col 5 line 32-33 changing the width of a pulse is equivalent to changing its bandwidth. This equivalency

is from the Fourier transform. For example the Fourier transform of a rectangular pulse is the sinc function, as the rectangular pulse is narrowed in the time domain, its frequency bandwidth changes (increases) in the frequency domain) of the response.

Regarding **Claim 4**:

Chow teaches the slave (receiver col 2 line 45) returns the response by distorting the response (variable target bit error rates col 5 line 35) according to the one different specified distortion level (performance margin objective and desired overall bit-error-rate col 7 lines 25-27).

Furthermore, Chow teaches changing the width of each pulse (Col 5 line 32-33 changing the width of a pulse is equivalent to changing its bandwidth. This equivalency is from the Fourier transform. For example the Fourier transform of a rectangular pulse is the sinc function, as the rectangular pulse is narrowed in the time domain, its frequency bandwidth changes (increases) in the frequency domain) of the response.

Regarding **Claim 5**:

Bell teaches a repeater (Fig. 3 node RN2 Col 9 line 60-61) connected between the master unit (RN1 Col 12 line 5-6) and the slave (RN3) (Col 9 lines 54, 56, 60, 61, 66-67), the repeater being adapted to carry out waveform shaping on the distorted test pattern to form a corrected signal and to output the corrected signal after distorting the corrected signal according to the specified distortion level (Col 12 line 18-23).

In addition, Chow teaches changing the width of each pulse (Col 5 line 32-33 changing the width of a pulse is equivalent to changing its bandwidth. This equivalency is from the Fourier transform. For example the Fourier transform of a rectangular pulse is the sinc function, as the rectangular pulse is narrowed in the time domain, its frequency bandwidth changes (increases) in the frequency domain) of the corrected signal.

Regarding **Claim 6**:

Bell teaches a repeater (Fig. 3 node RN2 Col 9 line 60-61) connected between the master unit (RN1 Col 12 line 5-6) and the slave (RN3) (Col 9 lines 54, 56, 60, 61, 66-67), the repeater being adapted (learns the link characteristics) to carry out waveform shaping (bandwidth optimization) (col 12 lines 18-23 and Chow col 3 lines 21-26) on the distorted test pattern to output a corrected signal and to output the corrected signal after distorting the corrected signal according to the one different specified distortion level (Col 12 line 18-23).

In addition, Chow teaches changing the width of each pulse (Col 5 line 32-33 changing the width of a pulse is equivalent to changing its bandwidth. This equivalency is from the Fourier transform. For example the Fourier transform of a rectangular pulse is the sinc function, as the rectangular pulse is narrowed in the time domain, its frequency bandwidth changes (increases) in the frequency domain) of the corrected signal.

Regarding **Claim 7**:

Bell teaches a repeater (Fig. 3 node RN2 Col 9 line 60-61) connected between the master unit (RN1 Col 12 line 5-6) and the slave (RN3) (Col 9 lines 54, 56, 60, 61, 66-67), the repeater being adapted (learns the link characteristics) to carry out waveform shaping (bandwidth optimization) (col 12 lines 18-23 and Chow col 3 lines 21-26) on the distorted test pattern to output a corrected signal and to output the corrected signal after distorting the corrected signal according to the specified distortion level (Col 12 line 18-23).

In addition, Chow teaches changing the width of each pulse (Col 5 line 32-33 changing the width of a pulse is equivalent to changing its bandwidth. This equivalency is from the Fourier transform. For example the Fourier transform of a rectangular pulse is the sinc function, as the rectangular pulse is narrowed in the time domain, its frequency bandwidth changes (increases) in the frequency domain) of the corrected signal.

Regarding **Claim 8**:

Bell teaches a repeater (Fig. 3 node RN2 Col 9 line 60-61) connected between the master unit (RN1 Col 12 line 5-6) and the slave (RN3) (Col 9 lines 54, 56, 60, 61, 66-67), the repeater being adapted (learns the link characteristics) to carry out waveform shaping (bandwidth optimization) (col 12 lines 18-23 and Chow col 3 lines 21-26) on the distorted test pattern to output a corrected signal and to output the corrected signal after distorting the corrected signal according to the one different specified distortion level (Col 12 line 18-23).

In addition, Chow teaches changing the width of each pulse (Col 5 line 32-33 changing the width of a pulse is equivalent to changing its bandwidth. This equivalency is from the Fourier transform. For example the Fourier transform of a rectangular pulse is the sinc function, as the rectangular pulse is narrowed in the time domain, its frequency bandwidth changes (increases) in the frequency domain) of the corrected signal.

Regarding **Claim 20**:

Bell (col 10, lines 9-12), (col 11-12, lines 57-3), (col 10, lines 19-21) teaches a network system comprising a master unit (the Master node col 11, line 65) forming a programmable controller (programmable processor col 8, lines 36-39) and being connected to a network, the master unit comprising: transmitting means for transmitting a distorted test pattern (discrete multi-tone col 11, line 67) to a slave (node col 12, line 37), the distorted test pattern being formed by distorting a standard test pattern to a specified distortion level (discrete multi-tone col 11, line 67), the slave being connected to the network; and judging means for judging that the network has communication stability corresponding to the specified distortion level if the master unit receives a response normally from the slave, the slave being adapted to return the response when the distorted test pattern is received normally (channel equalization process col 11, line 66).

In addition, Chow teaches changing the width of each pulse (Col 5 line 32-33 changing the width of a pulse is equivalent to changing its bandwidth. This equivalency is from the Fourier transform. For example the Fourier transform of a rectangular pulse is the

sinc function, as the rectangular pulse is narrowed in the time domain, its frequency bandwidth changes (increases) in the frequency domain) of a standard test pattern.

Regarding **Claim 21**:

Bell teaches a repeater (Fig. 3 node RN2 Col 9 line 60-61) for a network system including a master unit (RN1 Col 12 line 5-6), a slave (RN3 Col 12 line 37) and one or more repeaters (RNx Col 12 line 31) including the repeater between the master unit and the slave, the repeater comprising: waveform shaping means for carrying out waveform shaping on a distorted test pattern distorted to a specified distortion level (discrete multi-tone col 11, line 67) and sent from said master unit; and outputting means for distorting the waveform-shaped test pattern according to the specified distortion level (noise and attenuation col 4, line 33) and outputting the distorted waveform-shaped test pattern (channel equalization process col 11, line 66) (Col 12 line 18-23).

In addition, Chow teaches changing the width of each pulse (Col 5 line 32-33 changing the width of a pulse is equivalent to changing its bandwidth. This equivalency is from the Fourier transform. For example the Fourier transform of a rectangular pulse is the sinc function; as the rectangular pulse is narrowed in the time domain, its frequency bandwidth changes (increases) in the frequency domain) of the waveform-shaped test pattern.

Response to Arguments

Applicant's arguments filed 09/17/2007 have been fully considered but they are not persuasive.

The main argument is that the claims are directed to changing the width of each pulse of the test pattern, and that the distortion of test pattern is effected by changing the width of the pulse; versus, Bell and Chow relate to the technology of using a plurality of frequency bands. Examiner respectfully points out that changing the width of a pulse is equivalent to changing its bandwidth. This equivalency is from the Fourier transform. For example the Fourier transform of a rectangular pulse is the sinc function, as the rectangular pulse is narrowed in the time domain, its frequency bandwidth changes (increases) in the frequency domain.

The second argument is that the claims are directed to baseband communication technology. The examiner respectfully points out that the claims are directed to distorted test pattern formed by changing width of each pulse. A pulse would cover the entire range of possible waveforms, both waveforms that have their spectral energy concentrated at the baseband and also waveforms that have most of their spectral energy concentrated at higher frequency bands.

Conclusion

3. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Yoshida (USP 5943364) discloses setting bit rate according to line quality.

shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Hooman Houshmand whose telephone number is 571-270-1817. The examiner can normally be reached on Monday - Friday 8 to 5.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Hassan Kizou can be reached on (571) 272-3088. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

HH

Hooman Houshmand
Patent Examiner
November 16, 2007

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